

Work Order ID 154466

Tuesday, December 13, 2016 11:48:48 AM

154466

Page 2

Item ID: D4463-041

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Tank Top Assembly

Start Date: 12/13/2016 Start Qty: 1.00

1

Cust Item ID:

Required Date: 12/16/2016 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130 *130* Small Fab Small Fab	NO BRAKE Memo C'SINK HOLES AS PER DWG	0.00 0.04							
140 *140* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.00							
150 *150* HandFinish Hand Finishing	Chemical Conversion Coat per QSI005 4.1 Memo	0.00 0.02							

N/A Done on original 147335

154466

Item ID: D4463-041
Revision ID:
Item Name: Tank Top Assembly
Start Date: 12/13/2016 Start Qty: 1.00
Required Date: 12/16/2016 Req'd Qty: 1.00
Reference:

1
Cust Item ID:
Customer:

Approvals: Process Plan: Date: Tooling: SPC (Y/N): Date: QC: Date:

Run Start *NR1*
Stop *NR2*

Sequence ID/Work Center ID Operation Description Set Up/Run Hours Tool ID Tool # Plan Code Accept Qty Reject Qty Reject Number Insp. Stamp

160
16N
QC
Quality Control

QC7-Inspect Chemical Conversion Coat
Memo

0.00

170
17N
Small Fab
Small Fab

INSTALL ANCHOR NUTS AS PER DWG
Memo

0.09

QC5- Inspect part completeness to step on W/O
Memo

0.00

180
18N
QC
Quality Control

DAS 38 9-89
DEC 14 2016

DAS 36 9-89
16/12/14

1

IX

N900040100

Accept

Setup Start

NS1

Stop

NS2

Work Order ID 154466

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154466

Page 4

Item ID: D4463-041

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Tank Top Assembly

Start Date: 12/13/2016 Start Qty: 1.00

1

Cust Item ID:

Required Date: 12/16/2016 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start

NR1

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

190

Identify as per dwg & Stock Location: _____

0.00

190

Packaging

Memo

0.00

Packaging

LOCATION: WA003

DEC 14 2016

DEC 6 9:00

200

QC21- Final Inspection - Work Order Release

0.00

200

QC

Memo

0.02

Quality Control

DAS
21
9:00

DEC 15 2016

DEC 15 2016

MF
16-12-14

Picklist Print

Tuesday, December 13, 2016 11:48:47 AM

Page 1

Work Order ID: 154466

154466

Parent Item: D4463-041

D4463-041

Parent Item Name: Tank Top Assembly

Start Date: 12/13/2016

Required Date: 12/16/2016

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP REV:A 12.03.08 NEW ISSUE DD VERF:EC
12.04.25 AS PER DWG REV.B DD VERF:EC

IPP REV:B

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D4463-1 *D4463-1* Tank Top		Manufactured	No				Each	1.0000		1			DAS 36 9-89
					<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>			
					WA003			1					
					147335			1					
M6061T6S.063 *M6061T6S 063* 6061-T6 .063 Sheet		Purchased	No			100	sf	331.7800	3.864	4.067368			
					<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>			
					MAT021			331.78					
					M133511			2.6					
					M134377			3.3					
					M134830			157.98					
					M136251			167.9					
MS20426AD3-4 *MS20426AD3-4* RIVET		Purchased	No			170	Each	4,140.000	48	48			DAS 36 9-89
					<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>			
					GA			53					
					m131697			53					
					ST312			4087					
					m134294			4087					

N/A done on original 147335

16/12/14

16/12/14

48

Picklist Print

Tuesday, December 13, 2016 11:48:47 AM

Page 2

Work Order ID: 154466

154466

Parent Item: D4463-041

D4463-041

Parent Item Name: Tank Top Assembly

Start Date: 12/13/2016

Required Date: 12/16/2016

Start Qty: 1.00

Required Qty: 1.00

NAS1473R3

Purchased

No

170

Each

96.0000

24

24

NAS1473R3

Anchor Nut

DAS
36
9-89

16/12/14

Location

Loc Qty

Loc Code

GA

21

m132879

21

ST260

75

m135895

50

m136182

25

22

2

Work Order ID 147335

Wednesday, June 08, 2016 2:54:42 PM

147335

Page 1

Item ID: D4463-1

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Tank Top

Start Date: 6/3/2016 Start Qty: 2.00

2

Cust Item ID:

Required Date: 6/8/2016 Req'd Qty: 2.00

2

Customer:

Reference:

Approvals:

Process Plan: MUS

Date:

JUN 11 2016

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start ***NR1***Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Draw Nbr

Revision Nbr

D4463

001 D J. M.

100

0.00

100

Waterjet

Memo

0.00

FLOW CNC Waterjet

Cut as per dwg

Prog rev: PDwg rev: P

110

QC2- Inspect parts off machine FAI/FAIB

0.00

110

QC

Memo

0.00

Quality Control

120

QC8- Inspect parts - second check

0.00

120

QC

Memo

0.00

Quality Control

DAE
38
9-89

AUG 24 2016

P.T.O.

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="width:12.5%;">Cross tube ☐</td> <td style="width:12.5%;">Water Jet ☐</td> <td style="width:12.5%;">Engineering ☐</td> </tr> <tr> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>				Cross tube ☐	Water Jet ☐	Engineering ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Composite ☐	Supplier ☐																																											
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Date :		Step #:		QTY Effective :		MRB (QSI042) Approval																																																									
Description Work Order Deviation					Disposition																																																										
										Completed By																																																					
										Lead hand / Supervisor Approval Verification																																																					
										QC / QA Coordinator Approval																																																					
Root Cause					FAULT CATEGORY																																																										
Environment ☐	Design ☐	Doc/Data ☐	Equip/Tooling ☐	Handling/Pre ☐	Material ☐	Internal Transport ☐	Tribal Knowledge ☐	LOA ☐	Substation ☐	Past Expiry Date ☐	Misidentified ☐	No Re-verification ☐	Operator ☐	Offset/Setup ☐	Supplier ☐	Training ☐	Use for Testing ☐	Poor Information ☐	Rushing ☐	Product Improvement ☐	Process Improvement ☐	Manufacturing Process ☐	Past Due ☐	Pressure/Forced ☐	Bending ☐	Centre Not Concentric ☐	Cracks ☐	Crimp/Kink/Ripple/Wave ☐	Cuffs ☐	Crushing ☐	Heat Treat ☐	Wave/Twist in Tube ☐	Marks/Chatter ☐	Temperature/Cure ☐	Set-up ☐	BOM/Route ☐	Broken/Damage/Defect ☐	Inspection Incomplete/Unqualified ☐	Contamination ☐	Countersink ☐	Cut Too Short ☐	Instructions Incomplete/Unclear ☐	Drill Holes ☐	Power Loss/Surge ☐	Folio/Program ☐	Grain ☐	Weld ☐	Wrong Stock Pulled ☐	Out of Sequence ☐	Off-set ☐	Mislabeled ☐	Fit/Function ☐	Misaligned/off center ☐	Positioned Wrong ☐	Outside Dimensions ☐	Over/Under tolerance ☐	Part Incorrect ☐	Part Lost/Missing ☐	Part Moved ☐	Drawing ☐	Finish ☐	Misread ☐	Turning Sequence ☐
OTHER : _____																																																															

DQA:

Date: 09/22/2016



QA Closed:

Date: SEP 14 2016

WORK ORDER NON-CONFORMANCE / UPDATE

Work Order update only ☐

Work Order: 147335		DISPOSITION		AGAINST DEPARTMENT/PROCESS					
Part No. 04463-1		Rework ☐		Skid-tube ☐	Cross tube ☐	Water Jet ☒	Engineering ☐		
NCR No. 16-6032		Scrap ☒		Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐		
		Use-as-is ☐		Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐		
		Suspected Unapproved ☐		Large Fab ☐	Composite ☐	Supplier ☐			
Date: 16-08-31	Step #: 100	QTY Effective: 1				MRB (QS1042) Approval			
Description Work Order Deviation		Disposition				DAS 9-89 16-08-31			
Operator de bur hold too deep and de bur hold on both side		Scrap / destroy no replace				Combined by DAS 9-89 16-08-14			
						Lead hand / Supervisor Approval Verification 9-89 AUG 31 2016			
						QC / QA Coordinator Approval DAS 9-89 16-08-31			
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☒	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Station ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☒	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐								
Misidentified ☐	Past Due ☐	OTHER :							

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

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Work Order ID 147335

Wednesday, June 08, 2016 2:54:42 PM

147335

Page 2

Item ID: D4463-1

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Tank Top

Start Date: 6/3/2016 Start Qty: 2.00

2

Cust Item ID:

Required Date: 6/8/2016 Req'd Qty: 2.00

2

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
125		0.00							
125									
Small Fab	Memo	0.00				1X			DAS 36 16/08/2016
Small Fab	C'SINK HOLES AS PER DWG								
126	QC5- Inspect part completeness to step on W/O	0.00							
126									
QC	Memo	0.00				1			DAS 36 9-88
Quality Control									
130	Chemical Conversion Coat per QSI005 4.1	0.00							
130									
HandFinish	Memo	0.00							
Hand Finishing									

AUG 31 2016

(1)  2016/09/01
BBB

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width: 100%; border: none;"> <tr> <td style="width: 15%;">Skid-tube ☐</td> <td style="width: 15%;">Cross tube ☐</td> <td style="width: 15%;">Water Jet ☐</td> <td style="width: 15%;">Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																																			
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Work Order ID 147335

Wednesday, June 08, 2016 2:54:42 PM

147335

Page 3

Item ID: D4463-1

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Tank Top

Start Date: 6/3/2016 Start Qty: 2.00

2

Cust Item ID:

Required Date: 6/8/2016 Req'd Qty: 2.00

2

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140	QC7-Inspect Chemical Conversion Coat	0.00							
140									
QC	Memo	0.00				/			DAS 38 9-89 SEP 08 2016
Quality Control									
150	Identify as per dwg & Stock Location: <u>W1A003</u>	0.00							
150									
Packaging	Memo	0.00				/			DAS 6 9-89 SEP 09 2016
Packaging									
160	QC21- Final Inspection - Work Order Release	0.00							
160									
QC	Memo	0.00							DAS 21 9-89 SEP 09 2016
Quality Control									

DAS
21
9-89

SEP 08 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
							Completed By		
							Lead hand / Supervisor Approval Verification		
							QC / QA Coordinator Approval		

Root Cause				FAULT CATEGORY			
Environment ☐	☐	No Re-verification ☐	☐	Pressure/Forced ☐	☐	Temperature/Cure ☐	☐
Design ☐	☐	Operator ☐	☐	Bending ☐	☐	Set-up ☐	☐
Doc/Data ☐	☐	Offset/Setup ☐	☐	Centre Not Concentric ☐	☐	BOM/Route ☐	☐
Equip/Tooling ☐	☐	Supplier ☐	☐	Cracks ☐	☐	Broken/Damage/Defect ☐	☐
Handling/Pre ☐	☐	Training ☐	☐	Crimp/Kink/Ripple/Wave ☐	☐	Inspection Incomplete/Unqualified ☐	☐
Material ☐	☐	Use for Testing ☐	☐	Cuffs ☐	☐	Contamination ☐	☐
Internal Transport ☐	☐	Poor Information ☐	☐	Crushing ☐	☐	Countersink ☐	☐
Tribal Knowledge ☐	☐	Rushing ☐	☐	Heat Treat ☐	☐	Cut Too Short ☐	☐
LOA ☐	☐	Product Improvement ☐	☐	Wave/Twist in Tube ☐	☐	Instructions Incomplete/Unclear ☐	☐
Substation ☐	☐	Process Improvement ☐	☐	Marks/Chatter ☐	☐	Drill Holes ☐	☐
Past Expiry Date ☐	☐	Manufacturing Process ☐	☐	OTHER : _____			
Misidentified ☐	☐	Past Due ☐	☐				

Picklist Print

Wednesday, June 08, 2016 2:54:46 PM

Page 1

Work Order ID: 147335

147335

Parent Item: D4463-1

D4463-1

Parent Item Name: Tank Top

Start Date: 6/3/2016

Required Date: 6/8/2016

Start Qty: 2.00

Required Qty: 2.00

Comments: IPP REV:A 11.11.22 NEW ISSUE DD VERF:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M6061T6S.063		Purchased		No		100	sf	743.1000	3.872	8.151579			

M6061T6S 063

6061-T6 .063 Sheet

PR 2016/08/21

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
MAT021	407.1	
M133511	2.8	
M134377	4.9	
M134830	399.4	
TPI	336	
M134496	192	
M134604	144	

8.4

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width: 100%; border: none;"> <tr> <td style="width: 15%;">Skid-tube ☐</td> <td style="width: 15%;">Cross tube ☐</td> <td style="width: 15%;">Water Jet ☐</td> <td style="width: 15%;">Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																							
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Environment ☐	Design ☐	Doc/Data ☐	Equip/Tooling ☐	Handling/Pre ☐	Material ☐	Internal Transport ☐	Tribal Knowledge ☐	LOA ☐	Substation ☐	Past Expiry Date ☐	Misidentified ☐	No Re-verification ☐	Operator ☐	Offset/Setup ☐	Supplier ☐	Training ☐	Use for Testing ☐	Poor Information ☐	Rushing ☐	Product Improvement ☐	Process Improvement ☐	Manufacturing Process ☐	Past Due ☐	Pressure/Forced ☐	Bending ☐	Centre Not Concentric ☐	Cracks ☐	Crimp/Kink/Ripple/Wave ☐	Cuffs ☐	Crushing ☐	Heat Treat ☐	Wave/Twist in Tube ☐	Marks/Chatter ☐	Temperature/Cure ☐	Set-up ☐	BOM/Route ☐	Broken/Damage/Defect ☐	Inspection Incomplete/Unqualified ☐	Contamination ☐	Countersink ☐	Cut Too Short ☐	Instructions Incomplete/Unclear ☐	Drill Holes ☐	Power Loss/Surge ☐	Folio/Program ☐	Grain ☐	Weld ☐	Wrong Stock Pulled ☐	Out of Sequence ☐	Off-set ☐	Mislabeled ☐	Fit/Function ☐	Misaligned/off center ☐	Positioned Wrong ☐	Outside Dimensions ☐	Over/Under tolerance ☐	Part Incorrect ☐	Part Lost/Missing ☐	Part Moved ☐	Drawing ☐	Finish ☐	Misread ☐	Turning Sequence ☐
OTHER : _____																																																															

DART AEROSPACE LTD		Work Order:	147335
Description: Tank Top		Part Number:	D4463-1
Inspection Dwg: D4463	Rev: D	Page 1 of 2	

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.098	+0.004/-0.001	Ø.100	✓		Dc-02	
Ø0.206	+0.005/-0.001	Ø.208	✓		Dc-01	
Ø1.00	+0.012/-0.001	1.001	✓		Tape	
1.15	+/-0.030	1.158	✓			
1.85	+/-0.030	1.865	✓			
2.20	+/-0.030	2.23	✓			
2.30	+/-0.030	2.313	✓			
5.29	+/-0.030	5.298	✓			
8.30	+/-0.030	8.309	✓			
8.93	+/-0.030	8.938	✓			
8.98	+/-0.030	8.988	✓			
9.31	+/-0.030	9.314	✓			
10.42	+/-0.030	10.421	✓			
11.26	+/-0.030	11.253	✓			
1.61	+/-0.030	1.617	✓			
1.68	+/-0.030	1.681	✓			
1.82	+/-0.030	1.831	✓			
3.41	+/-0.030	3.413	✓			
3.79	+/-0.030	3.794	✓			
6.43	+/-0.030	6.436	✓			
7.36	+/-0.030	7.368	✓			
7.80	+/-0.030	7.805	✓			
10.75	+/-0.030	10.752	✓			
11.38	+/-0.030	11.378	✓			
11.80	+/-0.030	11.806	✓			
13.27	+/-0.030	13.27	✓			
1.15	+/-0.030	1.161	✓			
3.00	+/-0.030	3.011	✓			
3.26	+/-0.030	3.265	✓			
7.00	+/-0.030	7.010	✓			
10.74	+/-0.030	10.751	✓			
11.00	+/-0.030	11.008	✓			
11.63	+/-0.030	11.639	✓			
15.29	+/-0.030	15.29	✓			
15.48	+/-0.030	15.48	✓			
19.48	+/-0.030	19.48	✓			
23.48	+/-0.030	23.48	✓			
23.67	+/-0.030	23.67	✓			
24.11	+/-0.030	24.11	✓			
27.46	+/-0.030	27.46	✓			

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____	
Description Work Order Deviation				Disposition					
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

DART AEROSPACE LTD		Work Order:	177335
Description: Tank Top		Part Number:	D4463-1
Inspection Dwg: D4463	Rev: D	Page 2 of 2	

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
28.08	+/-0.030	28.10	✓		Tape	
30.05	+/-0.030	30.05	✓			
33.35	+/-0.030	33.35	✓			
33.40	+/-0.030	33.40	✓			
35.33	+/-0.030	35.33	✓			
2.38	+/-0.030	2.384	✓			
3.82	+/-0.030	3.837	✓			
7.53	+/-0.030	7.53	✓			
11.14	+/-0.030	11.14	✓			
14.86	+/-0.030	14.86	✓			
15.76	+/-0.030	15.76	✓			
20.01	+/-0.030	20.01	✓			
23.95	+/-0.030	23.95	✓			
27.55	+/-0.030	27.55	✓			
31.06	+/-0.030	31.06	✓			
33.08	+/-0.030	33.08	✓			
33.71	+/-0.030	33.71	✓			
0.063	+/-0.010	0.063	✓			

Measured by: PR/da	Audited by: 38	Preliminary Approval:
Date: 2016/08/21	Date: AUG 24 2016	Date:

Rev	Date	Change	Revised by	Approved
A	12.02.01	New Issue P/O D4463-041	KJ	
B	12.05.15	Dimensions updated per Dwg Rev C	KJ	
C	14.10.08	Dwg Rev updated	KJ	

DQA: _____ Date: _____

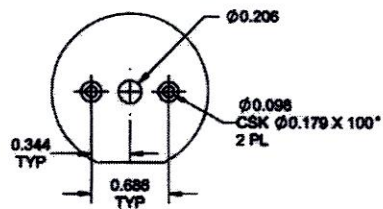


WORK ORDER NON-CONFORMANCE / UPDATE

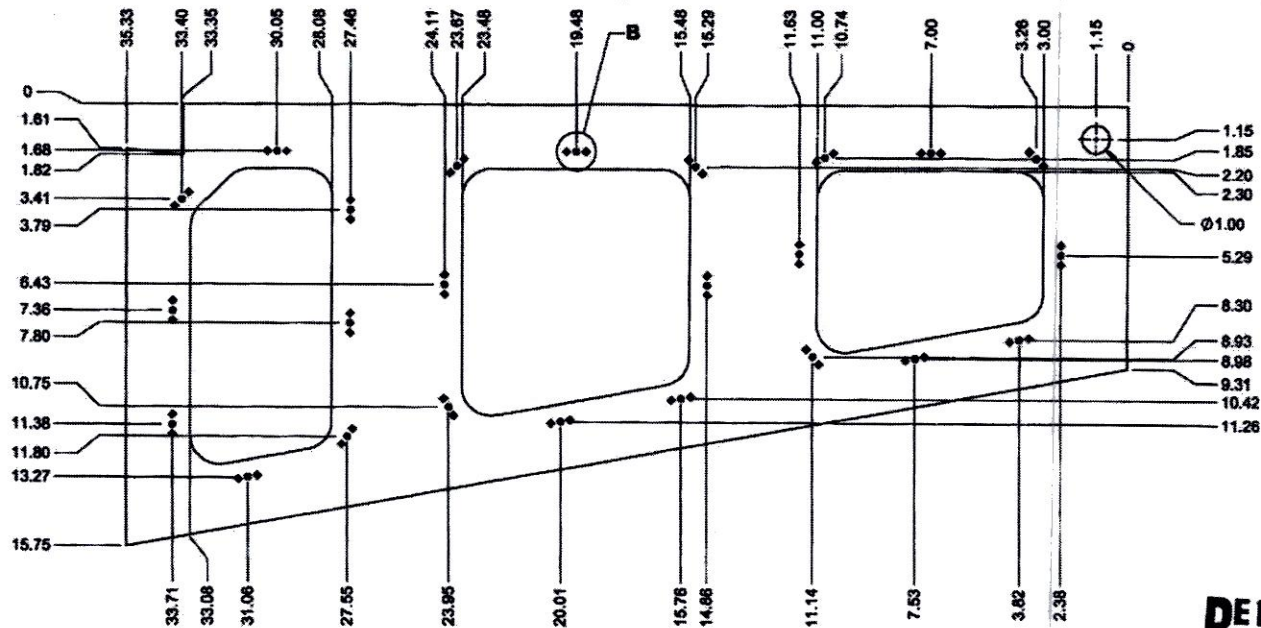
QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								



DETAIL B
(24 PL)



D4463-1 TANK TOP

NOTES:

- 1) MATERIAL: 6061-T6/T62 ALUMINUM SHEET, 0.063 THICK
PER QQ-A-250/11 OR AMS-QQ-A-250/11
OR AMS 4025 OR AMS 4027 OR ASTM B209
REF DART SPEC M6061T6S.063
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 1.70 lbs

DESIGN	ML	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	ML		
CHECKED	AP	DRAWING NO. D4463	REV. D
MFG. APPR.	JLM	TITLE AUX TANK	SHEET 2 OF 14
APPROVED	MP		SCALE
DE APPR.	DS		NTS
DATE	14.05.13	COPYRIGHT © 2011 BY DART AEROSPACE LTD THIS DOCUMENT IS PRELIMINARY AND UNCONTROLLED. IT IS THE USER'S RESPONSIBILITY TO OBTAIN THE LATEST EDITION OF THIS DOCUMENT.	

RELEASED
2014-06-11

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					